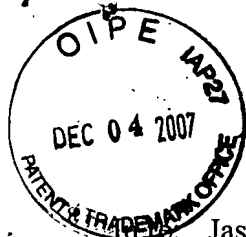


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[Signature]



IN THE UNITED STATES PATENT OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Jason C. Pearson,
Max A. Weaver, and
Michael J. Cry

Art Unit: 1714
Examiner: K. A. Sanders

Date filed: September 10, 2003

Docket No.: 71593

Serial No.: 10/659,225

Date Mailed: December 4, 2007

Confirmation No.: 5733

Title: Method For Reducing The Acetaldehyde Level in Polyesters

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING 37 CFR 1.10

I hereby certify that this correspondence, and any documents referred to herein as being enclosed herewith, is/are on the date shown below, being deposited with the United States Postal Service "Express Mail Post Office to Addressee" to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: December 4, 2007

[Signature]
Signature

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Mark L. Davis
(type or print name of person certifying)

TRANSMITTAL OF APPEAL BRIEF FEE

37 C.F.R. § 1.17(c)

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed November 8, 2007.

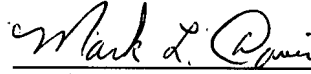
Payment of the appeal fee:

- ☐ A check in the amount of _____ payable to _____ is enclosed.
- ☐ Please charge my credit card, (enclose credit card form)
- ☒ Please charge deposit account the appeal fee under 37 CFR 41.20(b)(2) of \$510.00 to

Deposit Account No. 05-0221 in the name of Eastman Chemical Company. The Commissioner is hereby authorized to charge any additional fees under 37 CFR 1.16 and 1.17 which may be

required by this paper or credit any overpayment to Deposit Account No. 05-0221. A duplicate of this transmittal is enclosed.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Mark L. Davis", is written over a horizontal line.

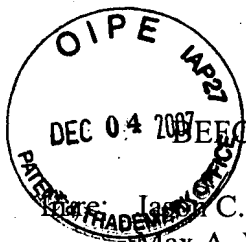
Mark L. Davis

Attorney for Applicants

Reg. No. 34,574

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Fax: 423-477-9402



IN THE UNITED STATES PATENT OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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Max A. Weaver, and
Michael J. Cyr

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Examiner: K. A. Sanders

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ATTENTION: BOARD OF PATENT APPEALS AND INTERFERENCES

CERTIFICATE OF MAILING 37 CFR 1.10

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Date: December 4, 2007

Mark L. Davis
Signature

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Mark L. Davis
(type or print name of person certifying)

APPEAL BRIEF

37 C.F.R. §41.37

This appeal brief is in furtherance of the Notice of Appeal filed in this case on October 18, 2007.

Accompanying the Appellants' Brief is TRANSMITTAL OF APPEAL BRIEF FEE authorizing payment of the requisite fees under 37 C.F.R. §1.17(c), including any fees necessary for an extension of time.

The filing of this Appeal Brief is timely as shown below:

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1. A final office action was mailed October 18, 2007 rejecting claims 53, 59, 65-69 and 71 pending in the application. Claims 44-52, 54-58, 60-64, 70 and 72-77 are pending in the case but are withdrawn from consideration.
2. A Notice of Appeal was timely mailed pursuant to 37 C.F.R. §1.8 on November 8, 2007.

This appeal is from the final office action rejecting Claims 53, 59, 65-69 and 71.

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I. REAL PARTY IN INTEREST

The real party in interest is Eastman Chemical Company, a Delaware corporation having a principal place of business at Kingsport, Tennessee.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to appellants, the appellants' legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-43 have been cancelled.

Claims 44-77 are pending in the application

Claims 44-52, 54-58, 60-64, 70 and 72-77 are pending in the case but have been withdrawn from consideration.

Claims 53, 59, 65-69 and 71 stand finally rejected.

Claims 53, 59, 65-69 and 71 are being appealed and appear in the Claims Appendix below.

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the final office action mailed October 18, 2007.

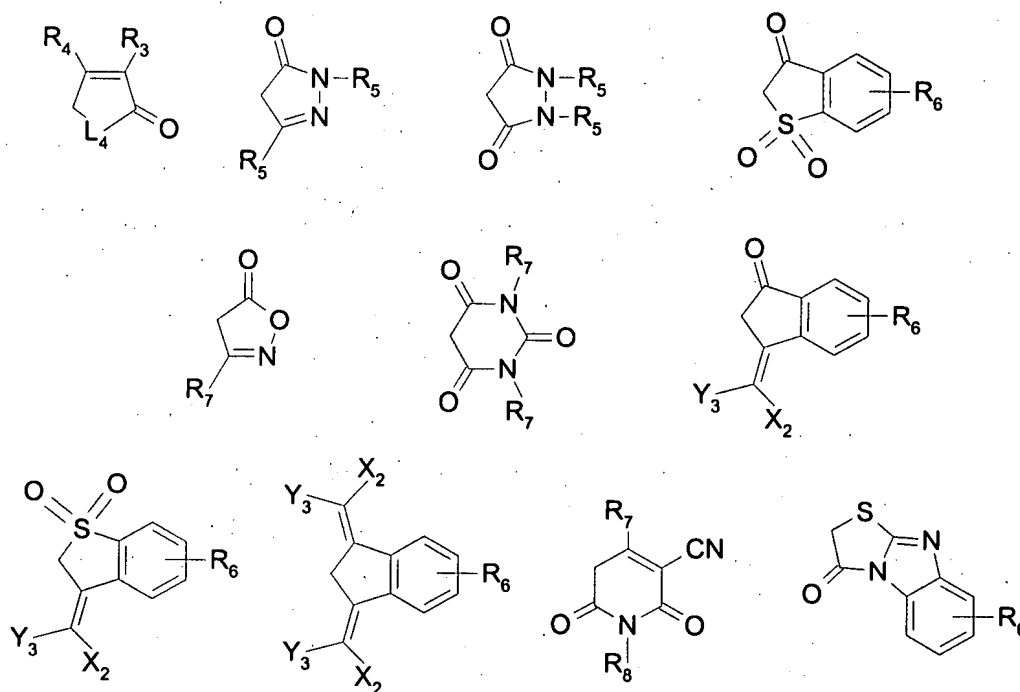
V.

SUMMARY OF INVENTION

Independent claim 53

In one embodiment, subject to an election of specie, the invention is directed to a polyester composition having at least one additive that is capable of reacting with acetaldehyde to form a new carbon-carbon bond, (page 5, lines 6-10).

The additive is selected from the group consisting of cyclic active methylene compounds represented by the following formulae:



(page 6, lines 11-15), wherein:

R_3 is selected from C_1 - C_6 -alkoxycarbonyl, cyano, heteroaryl, (page 6, line 16);

R_4 is selected from aryl and heteroaryl, (page 6, line 17);

R_5 is selected from hydrogen, C_1 - C_6 -alkyl, substituted C_1 - C_6 -alkyl, C_3 - C_8 -cycloalkyl and aryl, (page 7, lines 1-2);

R_6 is selected from hydrogen, C_1 - C_6 -alkyl, C_1 - C_6 -alkoxy, halogen, cyano, C_1 - C_6 -alkoxycarbonyl, trifluoromethyl, hydroxy, C_1 - C_6 -alkanoyloxy, aroyl, C_1 - C_6 -alkylthio, C_1 -

C₆-alkylsulfonyl, carbamoyl, sulfamoyl, -NHCOR₉, -NHSO₂R₉, -CONHR₉, -CON(R₉)₂, -SO₂NHR₉ and -SO₂N(R₉)₂; wherein R₉ is selected from C₁-C₆-alkyl, substituted C₁-C₆-alkyl, C₃-C₈-cycloalkyl and aryl, (page 7, lines 5-10);

R₇ is selected from hydrogen, C₁-C₆-alkyl, and aryl, (page 7, line 12);

X₂ and Y₃ are independently selected from cyano, C₁-C₆-alkylsulfonyl, arylsulfonyl and C₁-C₆-alkoxycarbonyl, (page 6, lines 6-7);

R₈ is selected from hydrogen, C₁-C₆-alkyl, substituted C₁-C₆-alkyl, C₃-C₈-cycloalkyl, C₃-C₈-alkenyl, C₃-C₈-alkynyl and aryl, (page 7, lines 14-15); and

L₄ is selected from -O-, -S- and -N(R₁₀)-, wherein R₁₀ is selected from hydrogen, C₁-C₆-alkyl, C₃-C₈-cycloalkyl and aryl, (page 7, lines 17-18).

Additionally, the terms "C₁-C₂₂-alkyl" and "C₁-C₆-alkyl", denote saturated hydrocarbon radicals or moieties that contains one to twenty-two carbons and one to six carbons, respectively, and which may be straight or branched-chain. Such C₁-C₂₂ alkyl and C₁-C₆-alkyl, groups can be selected from methyl, ethyl, propyl, butyl, pentyl, hexyl, heptyl, octyl, isopropyl, isobutyl, tertbutyl, neopentyl, 2-ethylheptyl, 2-ethylhexyl, and the like, (page 10, lines 11-16).

The terms "substituted C₁-C₂₂-alkyl" and "substituted C₁-C₆-alkyl" refer to C₁-C₂₂-alkyl radicals and C₁-C₆-alkyl radicals as described above that may be substituted with one or more substituents selected from hydroxy, halogen, cyano, aryl, heteroaryl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, C₁-C₆-alkoxy, C₁-C₆-alkanoyloxy, C₁-C₆-alkoxycarbonyl, C₁-C₆-alkylthio, C₁-C₆-alkylsulfonyl and the like, (page 10, lines 17-22).

The term "C₃-C₈-cycloalkyl" is used to denote a cycloaliphatic hydrocarbon radical containing three to eight carbon atoms, (page 10, lines 23-24).

The term "substituted C₃-C₈-cycloalkyl" is used to describe a C₃-C₈-cycloalkyl radical as detailed above containing at least one group selected from C₁-C₆-alkyl, C₁-C₆-alkoxy, hydroxy, halogen, and the like, (page 10, lines 25-27).

The term "aryl" is used to denote an aromatic ring system containing 6, 10 or 14 carbon atoms in the conjugated aromatic ring structure and these ring systems substituted with one or more groups selected from C₁-C₆-alkyl; C₁-C₆-alkoxycarbonyl; C₁-C₆-alkoxy; phenyl, and phenyl substituted with C₁-C₆-alkyl, C₁-C₆-alkoxy, halogen and the like; C₃-C₈-cycloalkyl;

halogen; hydroxy; cyano; trifluoromethyl and the like. Typical aryl groups include phenyl, naphthyl, phenylnaphthyl, anthryl (anthracenyl) and the like, (page 10, line 28 - page 11, line 5).

The term "heteroaryl" is used to describe conjugated cyclic radicals containing at least one heteroatom selected from sulfur, oxygen, nitrogen or a combination of these in combination with from two to about ten carbon atoms and these heteroaryl radicals substituted with the groups mentioned above as possible substituents on the aryl ring. Typical heteroaryl ring systems include: furyl, thienyl, pyrrolyl, imidazolyl, pyrazolyl, thiazolyl, isothiazolyl, oxazolyl, isoxazolyl, triazolyl, thiadiazolyl, oxadiazolyl, tetrazolyl, thiatriazolyl, oxatriazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazinyl, thiazinyl, oxazinyl, triazinyl, thiadiazinyl, oxadiazinyl, dithiazinyl, dioxazinyl, oxathiazinyl, tetrazinyl, thiatriazinyl, oxatriazinyl, dithiadiazinyl, imidazolinyl, dihydropyrimidyl, tetrahydropyrimidyl, tetrazolo-[1,5-b]pyridazinyl and purinyl, benzoxazolyl, benzothiazolyl, benzimidazolyl, indolyl, and the like, (page 11, lines 6-17).

The term "halogen" is used to represent fluorine, chlorine, bromine, and iodine, (page 11, lines 18-19).

The term "C₂-C₂₂-alkylene" is used to denote a divalent hydrocarbon group that contains from two to twenty-two carbons and which may be straight or branched chain and which may be substituted with one or more substituents selected from hydroxy, halogen, C₁-C₆-alkoxy, C₁-C₆-alkanoyloxy and aryl, (page 11, lines 20-24).

The term "C₃-C₈-cycloalkylene" is used to denote divalent cycloaliphatic groups containing three to eight carbon atoms and these are optionally substituted with one or more C₁-C₆-alkyl groups, (page 11, lines 25-27).

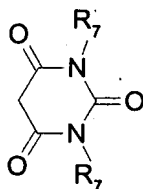
The term "arylene" is used to denote 1,2-, 1,3-, and 1,4-phenylene or naphthalene-diyl groups and such groups optionally substituted with C₁-C₆-alkyl, C₁-C₆-alkoxy and halogen, (page 11, lines 28-30).

The terms "C₁-C₆-alkoxy", "C₁-C₆-alkylthio", "C₁-C₆-alkylsulfonyl", "C₁-C₆-alkanoyloxy", "C₁-C₆-alkoxycarbonyl" are used to denote the following radicals, respectively: -OR₁₁, -SR₁₁, -O₂S-R₁₁, -OCO-R₁₁ and -CO₂R₁₁, wherein R₁₁ represents C₁-C₆-alkyl and substituted C₁-C₆-alkyl, (page 12, lines 1-4).

The term "aroyle" is used to represent -OC-aryl, wherein aryl is as previously defined, (page 12, lines 5-6).

The terms "C₃-C₈-alkenyl" and "C₃-C₈-alkynyl" are used to denote branched or straight chain hydrocarbon radicals containing at least one double bond and one triple bond, respectively, (page 12, lines 7-9).

In independent claim 53, the examiner's requirement for election of specie of cyclic compounds having an active methylene moiety, the invention includes a polyester having an additive that is capable of forming a new carbon to carbon bond wherein the additive has the formula:



wherein R₇ is as defined above.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 44-52, 54-58, 60-64, 70, 72 and 73 must be cancelled since they were withdrawn from consideration in an election of specie.
2. Whether claims 53, 59, 65-69 and 71 are unpatentable under 35 U.S.C. § 103 (a) over Harashina et al. (U.S. 7,115,677).

VII.

ARGUMENT

A. WHETHER CLAIMS 44-52, 54-58, 60-64, 70, 72 AND 73 MUST BE CANCELLED SINCE THEY WERE WITHDRAWN FROM CONSIDERATION IN AN ELECTION OF SPECIE.

The examiner restricted claims 1-43, now cancelled but corresponding to present claims 44-77, with regard to composition claims, Group I and method claims, Group II in the office action dated September 6, 2005. In the same office action the examiner required an election of specie with regard to the generic claim.

In the office action dated October 18, 2007 the examiner maintained the restriction and made the restriction final. However, the examiner held that all claims, including specie claims contained in the generic claim, must be cancelled. This is contrary to the office action dated September 6, 2005 and MPEP Section 808.01 wherein the non-elected specie will be rejoined when the allowed specie is allowable provided there is a disclosed relationship between the specie.

As noted in the claim, the non-elected specie and the elected specie are capable of reacting with acetaldehyde to form a new carbon-carbon bond when added to a polyester. Accordingly, claims 44-52, 54-58, 60-64, 70, 72 and 73 should not be cancelled and should be rejoined once the generic claim is allowed since the specie claims require all the limitations of the generic claim.

B. REJECTIONS UNDER 35 U.S.C. § 103 (a) OVER HARASHINA ET AL. (U.S. 7,115,677).

The examiner rejected claims 53, 59, 65-69 and 71 under 35 U.S.C. § 103 (a) as being obvious over Harashina et al. (U.S. 7,115,677).

The '677 patent discloses a flame retardant composition having a base resin, from 10 to 300 parts by weight a flame retardant, from 1 to 200 parts by weight of an inorganic filler that has been treated with a surface treating agent or sizing agent containing a novolak epoxy resin, and a styrenic resin, wherein the parts by weight are based on 100 parts by weight of the base

resin. The flame retardant material comprises: (B1) at least one member selected from a polyphenylene oxide resin or a polyphenylene sulfide resin; (B2) a phosphoric ester, and (B3) a salt of a nitrogen containing cyclic compound having an amino group with an oxygen acid, an organic phosphoric acid or an organic sulfonic acid. The inorganic fiber includes such materials as glass fibers, asbestos fiber, silica fiber, silica-alumina fiber, zirconia fiber, potassium titanate fiber, metal fiber, glass flake, mica, and the like.

In addition to the above, the retardant composition may further include a second flame retardant such as a nitrogen containing flame retardant, a sulfur-containing flame retardant, a silicon-containing flame retardant, an alcohol-based flame retardant, an expansive graphite and others. One example of the nitrogen containing flame retardant is barbituric acid, column 26, lines 25-40.

The purpose of the '677 patent was to provide a flame-retardant resin composition in which dripping is inhibited and one in which a halogen-containing compound is not used without deteriorating the mechanical properties of the resin.

However, Applicants submit that claim 53 would not include such materials as an inorganic filler that has been treated with a surface treating agent or sizing agent containing a novolak epoxy resin, or flame retardants B1-B3 since the claim is a polyester compound consisting essentially of a polyester; and at least one additive having a cyclic active methylene compounds that is capable of reacting with acetaldehyde to form a new carbon-carbon bond.

Applicants submit that the flame retardant materials and inorganic fillers treated with a novolak epoxy resin as specified in the '677 reference would materially change the presently claimed polyester composition and therefore are outside of the scope of the presently claimed invention.

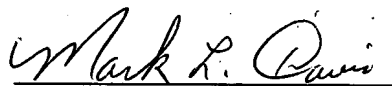
To establish a *prima facie* case of obviousness the following tenets must be considered by the examiner: 1) the claimed invention must be considered as a whole; 2) the references must suggest the desirability and the obviousness of making the combination; 3) the teaching of the references must be viewed without the benefit of using the teaching of the claimed invention, i.e., without using impermissible hindsight to reconstruct the claimed invention; and 4) there must be a reasonable expectation of success that the claimed invention will work for its intended

use. Hodosh v. Block Drug Co., Inc., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986), *cert. denied*, 485 U.S. 1007 (1988). Applicants submit that the examiner has not followed these tenets to establish a *prima facie* case of obviousness.

There is no expectation of success that the claimed invention will work for its intended purpose since the '677 patent is directed to flame resistance. There is simply no teaching or suggestion for using the elected compound for reducing acetaldehyde concentration in a polyester by forming a new carbon-carbon bond.

For the reasons above, Applicants submit that claims 53, 59, 65-69 and 71 are patentably distinguishable over U.S. 7,115,677 and respectfully request that the 35 U.S.C. § 103 (a) rejection be withdrawn.

Respectfully submitted,



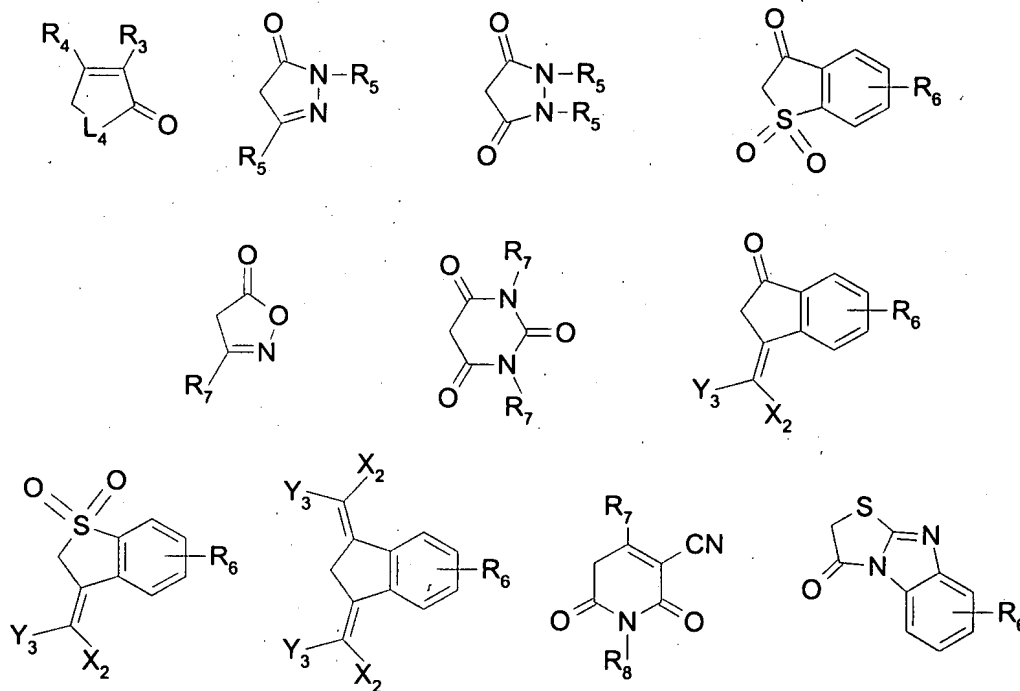
Mark L. Davis
Attorney for Applicants
Reg. No. 34,574

VIII.

CLAIMS APPENDIX

53. A polyester composition consisting essentially of :

- (a) a polyester; and
- (b) at least one additive that is capable of reacting with acetaldehyde to form a new carbon-carbon bond, said additive selected from the group consisting of cyclic active methylene compounds represented by the following formulae:



wherein R_3 is selected from C_1 - C_6 -alkoxycarbonyl, cyano, heteroaryl;

wherein R_4 is selected from aryl and heteroaryl;

wherein R_5 is selected from hydrogen, C_1 - C_6 -alkyl, substituted C_1 - C_6 -alkyl, C_3 - C_8 -cycloalkyl and aryl;

wherein R_6 is selected from hydrogen, C_1 - C_6 -alkyl, C_1 - C_6 -alkoxy, halogen, cyano, C_1 - C_6 -alkoxycarbonyl, trifluoromethyl, hydroxy, C_1 - C_6 -alkanoyloxy, aroyl, C_1 - C_6 -alkylthio, C_1 - C_6 -alkylsulfonyl, carbamoyl, sulfamoyl, $-NHCOR_9$, $-NHSO_2R_9$, $-CONHR_9$, $-CON(R_9)_2$, $-SO_2NHR_9$ and $-SO_2N(R_9)_2$; wherein R_9 is selected from C_1 - C_6 -alkyl, substituted C_1 - C_6 -alkyl, C_3 - C_8 -cycloalkyl and aryl;

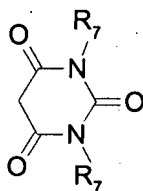
wherein R_7 is selected from hydrogen, C_1 - C_6 -alkyl, and aryl;

wherein X_2 and Y_3 are independently selected from cyano, C_1 - C_6 -alkylsulfonyl, arylsulfonyl and C_1 - C_6 -alkoxycarbonyl;

wherein R_8 is selected from hydrogen, C_1 - C_6 -alkyl, substituted C_1 - C_6 -alkyl, C_3 - C_8 -cycloalkyl, C_3 - C_8 -alkenyl, C_3 - C_8 -alkynyl and aryl; and

wherein L_4 is selected from $-O-$, $-S-$ and $-N(R_{10})-$, wherein R_{10} is selected from hydrogen, C_1 - C_6 -alkyl, C_3 - C_8 -cycloalkyl and aryl.

59. The polyester composition of claim 53 wherein the additive is a compound having the general formula:



65. The polyester composition of claims 44 or 53 further comprising 1-99 weight percent of a post-consumer recycled material.

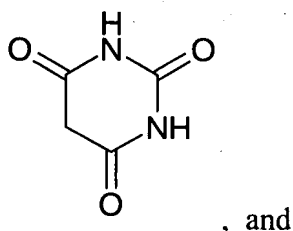
66. The polyester composition of claim 44 or 53 further comprising 0.01 to 10 weight percent of at least one colorant and/or ultraviolet light absorbing compound in the polyester.

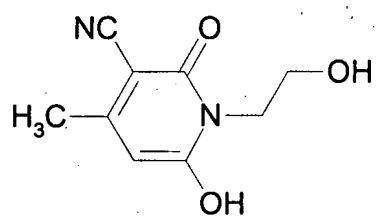
67. The polyester composition of claim 44 or 53 further comprising an infrared absorbing compound selected from carbon black, black iron oxide, reduced antimony metal catalyst residues, metal phthalocyanines, metal naphthalocyanines, and squaraines.

68. The polyester composition of claim 53 further comprising one compound known to catalyze the reaction between an acidic methylene and an aldehyde selected from the group consisting of hindered amine light stabilizers (HALS), amino acids, alkali metal salts of mono- and polycarboxylic acids, tertiary amines, secondary amines.

69. The polyester composition of claim 44 or 53 further comprising a non-sticking additive selected from lubricants, inorganic mineral composites, and talc.

71. The polyester composition of claim 53 wherein the additive is selected from the group consisting of compounds having the formula:





IX.

EVIDENCE APPENDIX

None

X.

RELATED PROCEEDINGS APPENDIX

None.